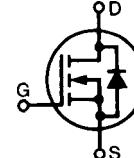


HiPerFET™ MOSFETs

ISOPLUS220™

Electrically Isolated Back Surface

N-Channel Enhancement Mode
High dV/dt, Low t_{rr} , HDMOS™ Family



IXFC 26N50
IXFC 24N50

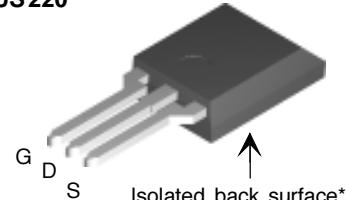
V_{DSS}	I_{D25}	$R_{DS(on)}$
500 V	23 A	0.20 Ω
500 V	21 A	0.23 Ω
$t_{rr} \leq 250 \text{ ns}$		

Symbol Test Conditions

Maximum Ratings

V_{DSS}	$T_J = 25^\circ\text{C}$ to 150°C	500	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GS} = 1 \text{ M}\Omega$	500	V
V_{GS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}$	26N50 24N50	23 21
I_{DM}	$T_C = 25^\circ\text{C}$, Pulse width limited by T_{JM}	26N50 24N50	92 84
I_{AR}	$T_C = 25^\circ\text{C}$	26N50 24N50	26 24
E_{AR}	$T_C = 25^\circ\text{C}$	30	mJ
dv/dt	$I_S \leq I_{DM}$, $di/dt \leq 100 \text{ A}/\mu\text{s}$, $V_{DD} \leq V_{DSS}$ $T_J \leq 150^\circ\text{C}$, $R_G = 2 \Omega$	5	V/ns
P_D	$T_C = 25^\circ\text{C}$	230	W
T_J		-55 ... +150	°C
T_{JM}		150	°C
T_{stg}		-55 ... +150	°C
T_L	1.6 mm (0.062 in.) from case for 10 s	300	°C
V_{ISOL}	50/60 Hz, RMS $t = 1$ minute leads-to-tab	2500	V~
Weight		3	g

ISOPLUS 220™



G = Gate D = Drain
S = Source

* Patent pending

Features

- Silicon chip on Direct-Copper-Bond substrate
 - High power dissipation
 - Isolated mounting surface
 - 2500V electrical isolation
- Low drain to tab capacitance(<35pF)
- Low $R_{DS(on)}$ HDMOS™ process
- Rugged polysilicon gate cell structure
- Unclamped Inductive Switching (UIS) rated
- Fast intrinsic Rectifier

Applications

- DC-DC converters
- Battery chargers
- Switched-mode and resonant-mode power supplies
- DC choppers
- AC motor control

Advantages

- Easy assembly: no screws, or isolation foils required
- Space savings
- High power density
- Low collector capacitance to ground (low EMI)

Symbol Test Conditions

Characteristic Values

($T_J = 25^\circ\text{C}$, unless otherwise specified)

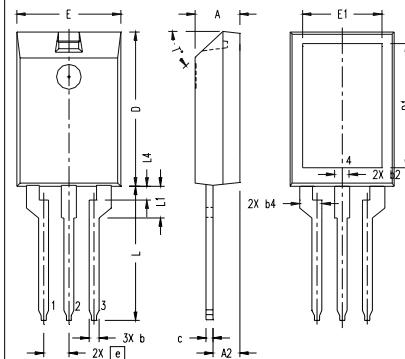
		min.	typ.	max.
V_{DSS}	$V_{GS} = 0 \text{ V}$, $I_D = 250 \mu\text{A}$	500		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 4 \text{ mA}$	2	4	V
I_{GSS}	$V_{GS} = \pm 20 \text{ V}$, $V_{DC} = 0$		± 100	nA
I_{DSS}	$V_{DS} = 0.8 V_{DSS}$ $V_{GS} = 0 \text{ V}$	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	200 1	μA mA
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$, $I_D = I_T$ Notes 1 & 2	26N50 24N50	0.20 0.23	Ω

Symbol	Test Conditions	Characteristic Values			
		($T_J = 25^\circ\text{C}$, unless otherwise specified)	min.	typ.	max.
g_{fs}	$V_{DS} = 15 \text{ V}; I_D = I_T$	Note 1	11	21	S
C_{iss} C_{oss} C_{rss}	$V_{GS} = 0 \text{ V}, V_{DS} = 25 \text{ V}, f = 1 \text{ MHz}$	4200		pF	
		450		pF	
		135		pF	
$t_{d(on)}$ t_r $t_{d(off)}$ t_f	$V_{GS} = 10 \text{ V}, V_{DS} = 0.5 \text{ V}_{DSS}, I_D = I_T$ $R_G = 1 \Omega$ (External),	16		ns	
		33		ns	
		65		ns	
		30		ns	
$Q_{g(on)}$ Q_{gs} Q_{gd}	$V_{GS} = 10 \text{ V}, V_{DS} = 0.5 \text{ V}_{DSS}, I_D = I_T$	135		nC	
		28		nC	
		62		nC	
R_{thJC}			0.54	K/W	
R_{thCK}		0.30		K/W	

Source-Drain Diode
Characteristic Values
 $(T_J = 25^\circ\text{C}, \text{unless otherwise specified})$

Symbol	Test Conditions	min.	typ.	max.
I_s	$V_{GS} = 0 \text{ V}$		26	A
I_{SM}	Repetitive; pulse width limited by T_{JM}		104	A
V_{SD}	$I_F = I_S, V_{GS} = 0 \text{ V}$, Note 1		1.5	V
t_{rr} Q_{RM}	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$ $I_F = I_S, -di/dt = 100 \text{ A}/\mu\text{s}$ $V_R = 100 \text{ V}$	250	ns	
		400	ns	
		1	1	μC
I_{RM}	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	2		μC
		10		A
	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	15		A

- Note: 1. Pulse test, $t \leq 300 \mu\text{s}$, duty cycle $d \leq 2 \%$
 2. I_T test current: IXFC26N50 $I_T = 13\text{A}$
 IXFC24N50 $I_T = 12\text{A}$
 3. See IXFH26N50 data sheet for characteristic curves.

ISOPLUS220 OUTLINE


SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.157	.197	4.00	5.00
A2	.098	.118	2.50	3.00
b	.035	.051	0.90	1.30
b2	.049	.065	1.25	1.65
b4	.093	.100	2.35	2.55
c	.028	.039	0.70	1.00
D	.591	.630	15.00	16.00
D1	.472	.512	12.00	13.00
E	.394	.433	10.00	11.00
E1	.295	.335	7.50	8.50
e	.100	BASIC	2.55	BASIC
L	.512	.571	13.00	14.50
L1	.118	.138	3.00	3.50
L4	.039	.059	1.00	1.50
T*			42.5°	47.5°

Note: All terminals are solder plated.

1 - Gate

2 - Drain

3 - Source